

CLAIMS

I claim:

1. A wireless communication system comprising:

a receiver front end having a first set of components and configured so that the receiver front end may be upgraded to a second set of components, the second set of components being configured to operate according to predetermined receiver front end characteristics.
2. The wireless communication system of claim 1, wherein the second set of components is configured to provide greater received signal sensitivity than the first set of components.
3. The wireless communication system of claim 2, wherein the second set of components includes one or more cryogenically cooled components.
4. The wireless communication system of claim 3, wherein the one or more cryogenically cooled components includes at least one cryogenically cooled amplifier.
5. The wireless communication system of claim 4, wherein the cryogenically cooled amplifier is a low noise amplifier.
6. The wireless communication system of claim 1, wherein the second set of components provides greater channel selectivity than the first set of components.
7. The wireless communication system of claim 6, wherein the second set of components includes one or more high temperature superconductor components.
8. The wireless communication system of claim 7, wherein the one or more high temperature superconductor components includes at least one high temperature superconductor filter.

9. The wireless communication system of claim 1, wherein the second set of components includes at least one cryogenically cooled amplifier and at least one high temperature superconductor filter.

10. The wireless communication system of claim 1, wherein the second set of components includes a subset of the first set of components.

11. The wireless communication system of claim 10, in which the first set of components and the second set of components include a dual duplexer configured to provide one or more duplexed channels.

12. The wireless communication system of claim 11, in which the number of duplexed channels is six.

13. The wireless communication system of claim 1, further comprising a base station wherein the receiver front end is a component coupled to the base station.

14. The wireless communication system of claim 1, further comprising a housing for the receiver front end having three dimensions of sufficient size to accommodate at least a portion of the first set of components and the second set of components.

15. A receiver or transceiver front end, comprising:

a plurality of functional modules, wherein said plurality of modules includes at least one of a high temperature superconductor component and one of a cryogenically cooled component.

16. The front end of claim 15, wherein the high temperature superconductor component is a high temperature superconductor filter.

17. The front end of claim 15, wherein the cryogenically cooled component is a cryogenically cooled amplifier.

18. A base station system, comprising:

a receiver having a front end including a first component that operates at a first predetermined characteristic and configured so that the front end may be upgraded to further include one or more second components, the second component operating at a second predetermined characteristic.
19. The base station system of claim 18, wherein the first component is a low noise amplifier.
20. The base station system of claim 18, wherein the second component is configured to provide greater received signal sensitivity than the first component.
21. The base station system of claim 20, wherein the second component includes one or more cryogenically cooled components.
22. The base station system of claim 21, wherein the one or more cryogenically cooled components includes at least one cryogenically cooled amplifier.
23. The base station system of claim 22, wherein the cryogenically cooled amplifier is a low noise amplifier.
24. The base station system of claim 18, wherein the second component is further configured to provide greater channel selectivity than the first component.
25. The base station system of claim 24, wherein the second component includes one or more high temperature superconductor components.
26. The base station system of claim 25, wherein the one or more high temperature superconductor components includes at least one high temperature superconductor filter.
27. The base station system of claim 18, wherein the second component includes a subset of the first component.

28. The base station system of claim 27, in which the first component and the second component includes a dual duplexer configured to provide one or more duplexed channels.
29. The base station system of claim 28, in which the number of duplexed channels is six.
30. The base station system of claim 18, further comprising a housing for the receiver front end having three dimensions of sufficient size so as to contain at least a portion of the first component and one or more of the second component, wherein the base station is a component of a wireless communication system.
31. A receiver or transceiver front end, comprising:

a housing to accommodate a first complete set of front end signal components that require a first volume of the housing, the housing further including an additional volume for allowing the receiver front end to be upgraded to have a second complete set of receiver front end signal components.
32. The front end of claim 31, wherein the second set of components is configured to provide greater received signal sensitivity than the first set of components.
33. The front end of claim 32, wherein the second set of components includes one or more cryogenically cooled components.
34. The front end of claim 33, wherein the one or more cryogenically cooled components includes at least one cryogenically cooled amplifier.
35. The front end of claim 34, wherein the cryogenically cooled amplifier is a low noise amplifier.
36. The front end of claim 35, wherein the second set of components is configured to provide greater channel selectivity than the first set of components.

37. The front end of claim 36, wherein the second set of components includes one or more high temperature superconductor components.

38. The front end of claim 37, wherein the one or more high temperature superconductor components includes at least one high temperature superconductor filter.

39. The front end of claim 31, wherein the second set of components includes a subset of the first set of components.

40. The front end of claim 31, wherein a total volume of the housing is approximately equal to or greater than 8064 cubic inches.

41. The front end of claim 31, wherein the housing is three dimensional and at least two of three dimensions of the housing is approximately equal to or greater than 24 inches.

42. A method for upgrading a receiver or transceiver front end, comprising the step of:

providing a modular design so that one or more parts of a first complete receiver front end system may be used as parts of a second complete receiver front end system.

43. The method for upgrading a receiver or transceiver front end of claim 42, further comprising the steps of:

removing one or more parts of the first complete receiver front end system; and

installing one or more different parts to create the second complete receiver front end system.